

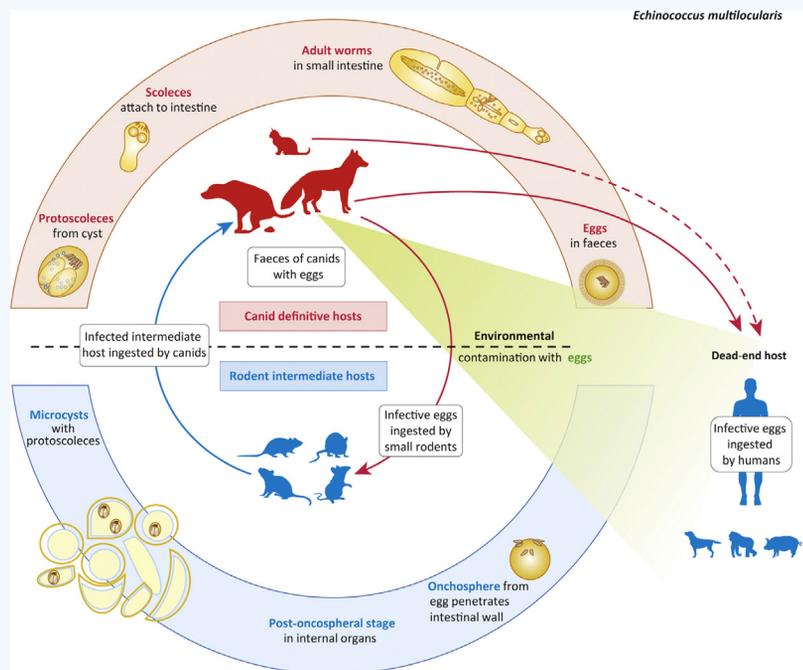
Echinococcus multilocularis

Adriano Casulli,^{1,2,*} Thomas F.E. Barth,³ and Francesca Tamarozzi^{1,2}

¹WHO Collaborating Centre for the Epidemiology, Detection, and Control of Cystic and Alveolar Echinococcosis (in Animals and Humans), Department of Infectious Diseases, Istituto Superiore di Sanità, Rome, Italy

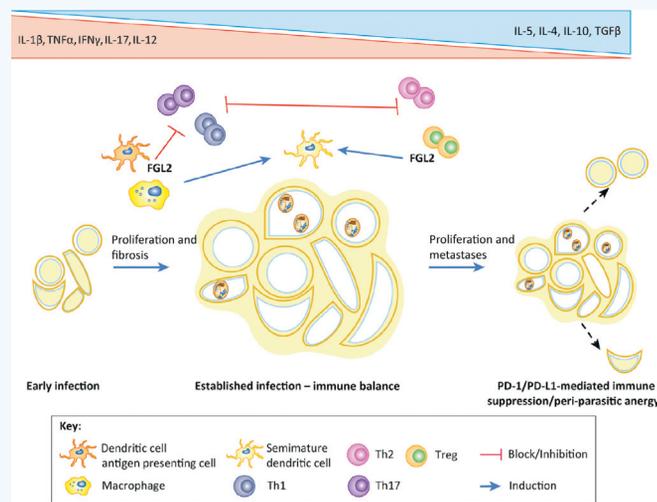
²European Reference Laboratory for Parasites, Department of Infectious Diseases, Istituto Superiore di Sanità, Rome, Italy

³Institute of Pathology, Ulm University, Ulm, Germany

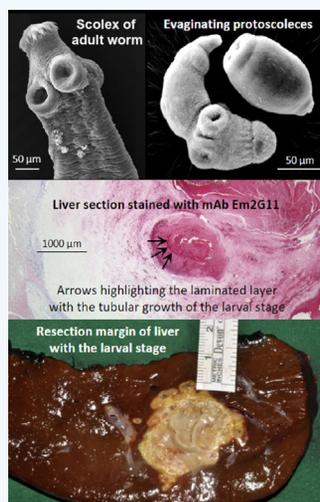


Trends in Parasitology

The larval stage of *Echinococcus multilocularis* is the etiological agent of alveolar echinococcosis (AE), a parasitic zoonotic disease distributed in the Northern hemisphere, with an estimated 17 400 new infections/year, most of which occur in China. The life cycle of *E. multilocularis* involves small rodent intermediate hosts, such as arviculids and, depending on the epidemiological settings, wild or domestic canid definitive hosts, such as red or arctic foxes, jackals, wolves, or dogs. Humans are aberrant intermediate hosts acquiring the infection through ingestion of eggs shed in the feces of definitive hosts. AE is a devastating clinical condition characterized by the silently progressing infiltrative proliferation of the parasite, mimicking a malignancy. AE is of increasing concern globally due to the geographical spread of the parasite, its increasing prevalence in animals from endemic areas, the absence of a vaccine, and the lack of active control measures to prevent the infection.



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KEY FACTS:

Human AE is a rare, neglected zoonotic disease, prioritized by the WHO for control.

Epidemiological research suggests *E. multilocularis* expansion in some endemic areas, although greater awareness and improved diagnostic tools may have contributed to increased detection of animal and human infections.

Risk factors for infection and parasite transmission pathways to humans are difficult to define due to the complex life cycle of the pathogen and the temporal lag between infection and onset of symptoms.

Control measures are logistically challenging due to the presence of wildlife hosts, and they focus mainly on baiting definitive hosts with anthelmintic praziquantel.

DISEASE FACTS:

AE primarily affects the liver and behaves like an infiltrative and eventually metastasizing tumor, with a high fatality rate if untreated. Immune suppression dramatically exacerbates disease progression.

The gold standard for AE diagnosis is the identification of parasite structures/genome in samples obtained invasively; imaging techniques demonstrate characteristic features of the lesions, while serology is complementary.

Human AE can be cured by radical surgery. However, many patients are no longer candidates for radical surgery due to late diagnosis. Infection in these cases is managed by life-long albendazole therapy.

TAXONOMY AND CLASSIFICATION:

PHYLUM: Platyhelminthes

CLASS: Cestoda

ORDER: Cyclophyllidea

FAMILY: Taeniidae

GENUS: *Echinococcus*

SPECIES: *E. multilocularis*

*Correspondence: adriano.casulli@iss.it (A. Casulli).



Acknowledgments

This work was supported by ERANet-LAC 2nd Joint Call (<http://www.eranet-lac.eu>) and the Italian Ministry of Health – NDTND project. The authors acknowledge Professor Andrew Hemphill (University of Bern) for providing the picture of the adult worm and protoscoleces. We are also grateful to Professor Bruno Gottstein (University of Bern) for the critical appraisal of the image of the mechanism network of host immune response.

Resources

www.who.int/echinococcosis/en/

www.cdc.gov/parasites/echinococcosis/index.html

www.who.int/echinococcosis/resources/WHO_HTM_NTD_NZD_2017.01/en/

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